

# Oral Health Integration in U.S. Nurse Practitioner Programs

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## Abstract

**Objectives:** The integration of oral health and primary health care in the United States (U.S.) is a national priority; yet, little is known about the current state of oral health and primary care integration in health professions' education. The objectives of this study were to assess oral health integration in U.S. nurse practitioner (NP) programs; and examine factors that influence integration and satisfaction with graduates' level of competence.

**Methods:** A 19-item, self-administered survey was distributed to 466 NP program directors

**Results:** A total of 230 NP program directors responded (49%). Results of forward stepwise logistic regression models suggest adult-gerontology programs were 69% less likely to have four or more hours of oral health curriculum (OR=0.31; 95% CI=0.14 – 0.72) and 57% less likely to be satisfied with graduates' current level of competence (OR=0.43; 95% CI=0.18 – 0.99) compared to family medicine programs. Significant factors that promote integration were presence of a faculty champion (OR = 4.13; 95% CI=1.78 – 9.59), routine teaching by dental professional (OR=4.92; 95% CI=1.82 – 13.31), routine teaching by a non-dental oral health expert (OR=2.52; 95% CI=1.22 – 5.20), and use of any method to evaluate students' level of competence (OR=3.32; 95% CI=1.14 – 9.69). Significant factors that promote satisfaction with NP graduates' level of competence were department support for oral health (OR=3.16; 95% CI=1.52 – 6.57), routine teaching by a dental professional (OR = 2.40; 95% CI=1.06 – 5.44), routine teaching by a non-dental oral health expert (OR=2.12; 95% CI=1.05 – 4.28), and use of any evaluation method (OR=3.43; 95% CI=0.95 – 12.41).

**Conclusions:** Current levels of oral health education and satisfaction with graduates' competence varies across NP specialty programs, and are associated with significant influencing factors.

## Introduction

Primary care and oral health (OH) integration has become part of the national conversation within U.S. healthcare training and practice. One segment of the primary care workforce, nurse practitioners (NPs), have led the way in early interprofessional education efforts including the integration of oral health.

Experts from the NP community were part of a 2014 U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA) convened panel to develop a set of core interprofessional OH competencies for primary care providers (HRSA, 2014). More recently, a new set of 'entry into independent practice' NP core competencies included a corresponding curriculum of which OH was a specific area of assessment (NONPF, 2017).

The purpose of this study was to: assess oral health curricular integration in NP programs; and examine factors that influence curricula integration and satisfaction with graduates' level of oral health competence.

## Methods

**Participants:** Program directors (N = 459) from the following NP programs:

- Family NP (n = 252)
- Pediatric NP (n = 74)
- Adult-Gerontology Primary Care NP (n = 133)

**Survey Instrument:**

- 19-item, self-administered survey
- 13 questions about oral health training (e.g., hours and days of training, curricular topics, etc.), the presence of dental professionals in teaching curricular components, the awareness and use of existing educational resources, barriers to inclusion of OH curriculum, evaluation methods of learner's OH competence, attitudes toward integration of OH and primary care, and satisfaction with learner's OH competence.
- 5 demographic questions plus 1 question requesting permission to contact for a follow-up study.

**Procedures:**

- Survey disseminated by email between February and June, 2017 through a web-based survey application (SurveyMonkey).
- Initial cover letter sent one week in advance of survey distribution. Letter described the study's purpose, its voluntary nature, and the anonymity of respondents.
- Four follow-up reminders were sent at three-week intervals as recommended by Dillman's Total Design Method.

**Data Analysis:**

- Descriptive, univariate, bivariate statistics; and forward stepwise logistic regression models were employed.
- Significance set at alpha = .05.

## Results

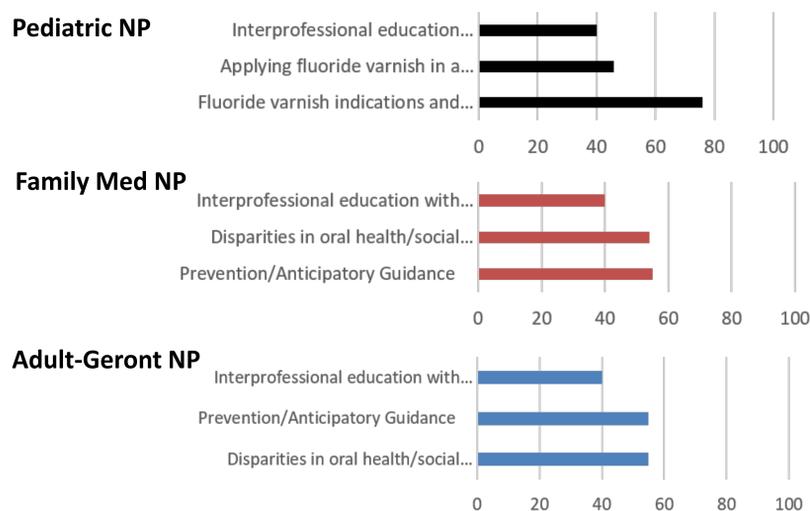
**Response Rate:** 50% (N = 230/459) of program directors responded

- Family NP: 106/252; 41%
- Pediatric NP: 50/74; 68%
- Adult-Gerontology Primary Care NP: 74/133; 56%

**Oral Health Covered in NP Curriculum:**

- Pediatrics NP – 100% (n = 50)
- Family Medicine NP – 93% (n = 47)
- Adult-Gerontology Primary Care NP – 84% (n = 62)

**Most Prevalent OH Topics in NP Curriculum:**



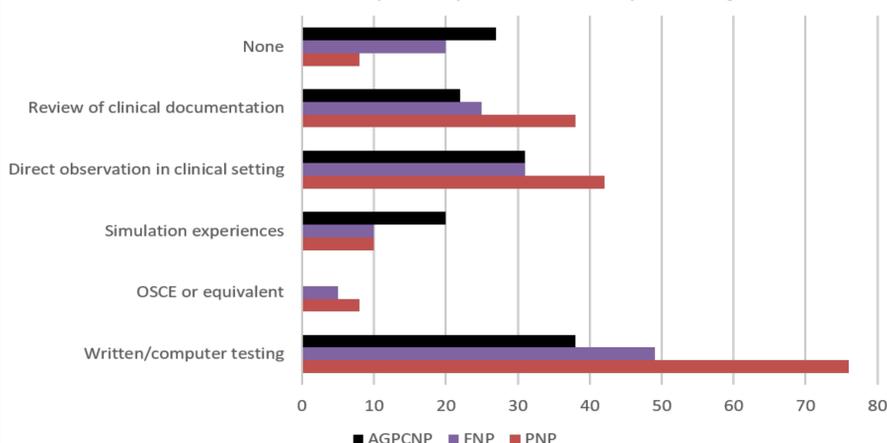
**Didactic, non-clinical OH education:** 86% reported a range of one to six hours

## Results

**Connection with dental institution/program/oral health expert:**

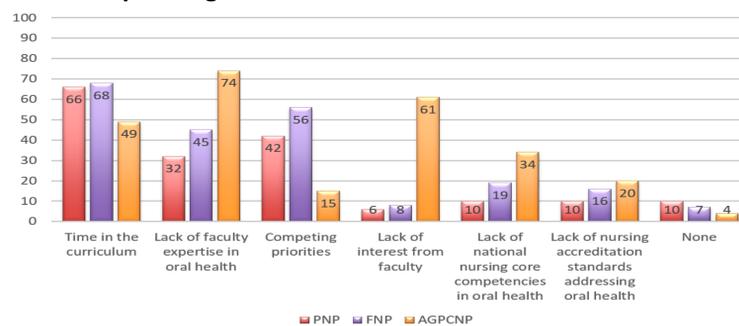
- 82% - no formal relationship with a dental school/residency, or dental hygiene program.
- 17% - routine teaching from a dental professional.
- 33% - routine teaching from a non-dental oral health expert.

**Evaluation Methods for OH Competency Assessment by NP Program:**



## Results

**Barriers to Incorporating OH into NP Curriculum:**



- Presence of a faculty OH champion was a key factor influencing integration.
- Programs with a faculty champion were significantly more likely to provide ≥ 7 hours of OH curriculum ( $X^2 = 14.67$ ;  $p < .001$ ); evaluate students on their OH competencies ( $X^2 = 4.92$ ;  $p = 0.03$ ); cover IPE with an OH component ( $X^2 = 26.84$ ;  $p < .001$ ); and be satisfied with graduates' level of OH competency ( $X^2 = 10.97$ ;  $p = .001$ ).
- Programs with a faculty OH champion were significantly more likely to use objective structured clinical examinations ( $X^2 = 5.03$ ;  $p = 0.02$ ); simulations ( $X^2 = 6.19$ ;  $p = 0.01$ ); or direct observation ( $X^2 = 9.58$ ;  $p = 0.002$ ).

## Conclusions

- The majority of pediatric, family medicine, and adult-gerontology primary care programs are educating NP graduates about oral health.
- Increase focus on evaluation of oral health competencies.
- Significant factors promoting curricular integration and satisfaction with graduates' level of competence included presence of a faculty champion and routine teaching by a dental professional or a non-dental oral health expert.

## About CIPCOH

The Center for Integration of Primary Care and Oral Health (CIPCOH) was established in 2016 at Harvard School of Dental Medicine/Harvard Medical School partnering with the University of Massachusetts Medical School, State University of New York – Stony Brook, and the Massachusetts College of Pharmacy and Health Sciences University, to serve as a national resource for systems-level research on OH integration into primary care training.

This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UH1HP29962, titled Academic Units for Primary Care Training and Enhancement. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. Government.